Bramstedt
Wetlands

USDA NRCS
Natural Resources Conservation Service

United States
Department of
Agriculture

1902 Fox Drive
Champaign, IL
61820

December 18, 1997

ILLINOIS BULLETIN NO. IL 190-8-4

SUBJECT: ECS - Wetland Mapping Conventions

Purpose: To distribute the revised IL Mapping Conventions

Expiration Date: September 30, 1998.

Filing Instructions: File the attached Illinois Wetland Mapping Conventions December 1997 Draft in the National Food Security Act Manual in front of Section 514.

With recent policy changes requiring on-site wetland determinations (see Illinois Bulletin No. IL-190-1) and in an attempt to be more consistent across state lines, it was necessary to revise the Illinois Mapping Conventions dated 1994. Attached is an operational draft which is to be put into use when received. The final draft will be distributed when all the signatory parties have signed it.

The mapping conventions is only a tool for making a wetland inventory. The inventory may aid in making a wetland determination, which requires an on-site visit. The mapping conventions should be utilized along with Section 514 of the Food Security Act Manual and an on-site visit when making a determination on cropland. This applies to wetland consultants, Corps of Engineers, as well as NRCS personnel.

If you have questions about it contact the NRCS Biologist assisting your office.

WILLIAM J. GRADLE
State Conservationist

need year +
slide #'s.

Attachment

Distribution: All Offices

cc: State Technical Comm. Members

filename: bulletin/mapcon.doc

WETLAND MAPPING CONVENTIONS
NRCS ILLINOIS 1998

INTRODUCTION

Mapping conventions are a set of accepted practices or procedures used to guide the wetland delineator in making off site wetland inventories, and on site determinations. The conventions developed for Illinois were done so with guidance from the NRCS Technical Service Center and revised according to the Midwest Regional Wetland Team recommendations. They were discussed and formulated with input from local, state and federal agency personnel.

The off site techniques rely on the interpretation of aerial photography and other inventories such as the County Soil Survey and the National Wetland Inventory (NWI). This requires training in properly identifying wetland signatures for the different types of aerial photography available. Off site techniques shall only be used by personnel trained in both wetland delineation and in identifying wetland signatures in the area.

Before a certified determination is made potential sites identified in the off-site phase will be field verified by making a field investigation of the site. The field investigation shall include:

1. For identified potential sites in intensively used and managed wetland areas (potential FW and FWP), as per definitions in the National Food Security Act Manual (NFSAM), verify that the site is wetland by documenting the presence of hydric soils, and any hydrophytic plants or hydrology indicators observed. Adjust site locations and wetland boundaries based upon observations during the field visit.

2. For identified potential sites in naturally vegetated wetland areas, document as per Corps of Engineer's 87 Manual requirements and set boundaries accordingly.

3. Any delineations omitted during the off-site phase may be added; any sites incorrectly delineated should be omitted.

GENERAL INFORMATION - ALL CONVENTIONS

Size of an area is not part of the wetland criteria. However, only areas large enough to detect and delineate on a map when interpreting aerial photography will be mapped as wetlands using this procedure. The on-site investigation may revise the determination to add small wetlands missed in the off-site inventory.

Mapping Tools - The following materials will be used in this procedure:

1) County Soil Survey with approved County Hydric Soil Legend

2) Base Map - Usually a NHAPP black and white aerial photo, 8 inch to mile scale, 24 X 24 inch sheet.

3) National Wetland Inventory (NWI) - The NWI provides an excellent overview of the extent and type of wetlands in the area. This inventory was done in the early 1980's (see photo date on each map) using infrared photography. In most cases, it has been very consistent with the Farm Bill wetland inventories. However, it does not delineate prior converted cropland, it did not use soils information, and in some cases it did not inventory wetlands in cropland due to the policy they were working under.

4) Climatic Data - Precipitation records from the area being mapped.

5) Long Duration Flooding Data - Elevations of 15 day flooding along major rivers were developed by the Illinois State Water Survey from stream gauge data.

6) FSA Slides - Aerial compliance (crop history) color slides (low altitude) used by FSA. At least five years of FSA slides must be used in this procedure. When making an individual determination, it is recommended that all available slides be viewed for general reference, but slides used for making the determination should be from years that are determined to have normal periods of precipitation before the slides where taken (see below). When inventorying a large area (an entire county or large part of a county), select five years, from those with slides available, with the closest to normal precipitation in the three months before the slides were taken. Use slides from these 5 years to complete the inventory.

Selection of slides with "normal precipitation"
Using records from weather reporting stations nearest the area to be mapped, assemble the long term precipitation averages and precipitation averages for each slide year for April, May, June, and for July alone. The slides are usually taken in July. Ponding in May and June can be observed on the slides taken in July, as areas where the crop was not planted because it was too wet, or was killed by the ponded water. Select the five years that are closest to the long term precipitation averages. Further information and procedures for determining "normal years" can be found in Section I of the Field Office Technical Guide under Climate Data. Balance, as well as possible, the number of wet and dry years. Select as many years as possible in the 1980 - 1985 range. This will help to establish conditions present on December 23, 1985 which is important to know when making the determination. If slides for years 1983, 1984 and 1985 are not selected because they do not represent years of "normal" precipitation, then review them before making the final determination to establish the conditions present on December 23, 1985.

Identification of wetland signatures
A wetland signature is the indication left in a field, recorded by a photograph, of ponding, flooding or impacts of saturation for sufficient duration that meets wetland hydrology and possibly wetland vegetation criteria. Being identified as a wetland on the NWI is also considered a wetland signature. Wetland signatures in Illinois are:

- NWI - Area is labeled as a wetland on the National Wetland Inventory
- Hydrophytic vegetation (observed as different color than crop or forage)
- Surface water
- Drowned-out crops or crop damage due to wetness.
- Differences in vegetation (within a field) due to different planting dates.
- Isolated areas that are not farmed with rest of the field (includes areas not planted due to wetness at time of planting).
- Inclusion of wet areas as set-aside if other signs of wetness are evident.
- Patches of greener vegetation (crop) during years of below normal precipitation
- Crop stress can be used only if the District Conservationist believes that it is a valid indicator in that area. Crop stress is seen on the FSA slides as areas of yellow crop, or sparse canopy coverage of crop, that has been in stress due to wetness.

The wetland delineator must be trained to interpret the above signatures in each region being mapped. This training should include field verification of the signatures observed.

WETLAND MAPPING CONVENTIONS

Three mapping conventions will be used in Illinois. The first convention will be used in the prairie pothole region of the state (see attached map). The second one will be used in the remainder of the state. The third convention will be used anywhere ponding or flooding is encountered. Ponding can occur anywhere while flooding is restricted primarily along the lower reaches of larger rivers.

The three mapping conventions are:

1. Prairie potholes and saturated soils in the Wisconsin Glaciation Region. It does not include alluvial soils. In cropland and non-native pastureland/hayland, farmed wetland and farmed wetland pasture areas must have 7 day ponding or 14 day saturation, during the growing season for greater than a 50 percent chance of occurrence each year (5 out of 10 years). In naturally vegetated wetlands soil saturation must be present at least 5% of the growing season to meet wetland hydrology criteria.

2. Saturated soils outside the Wisconsin Glaciation Region. Includes saturated alluvial soils state wide. In cropland, farmed wetland areas must have 15 days of ponding during the growing season for greater than a 50 percent chance of occurrence each year (5 out of 10 years). In non-native pastureland/hayland farmed wetland pasture areas must be have 7 day ponding or 14 day saturation during the growing season. In naturally vegetated wetlands soil saturation must be present at least 5% of the growing season to meet wetland hydrology criteria.

3. Flooded or ponded soils. These soils must be inundated for the required periods (below), during the growing season for greater than a 50 percent chance of occurrence each year (5 out of 10 years):

   a) Cropland manipulated and farmed before December 23, 1985 that floods or ponds for 15 consecutive days during the growing season.
   b) Pasture/hayland manipulated and farmed before December 23, 1985 that floods or ponds for 7 days during the growing season.
   c) In naturally vegetated wetlands inundation and/or soil saturation must be present at least 5% of the growing season to meet wetland hydrology criteria.

PRAIRIE POTHOLES AND SATURATED SOILS IN THE WISCONSIN GLACIATION REGION

Wetlands will be mapped using the following procedure as the basis for making inventories of wetlands in prairie pothole soils. These soils include all saturated soils in the Wisconsin Glaciation Region except for alluvial soils along streams and rivers.

Step 1.--Review base map. Note location of areas that appear to be wet (usually areas with dark soil tones).

Step 2. - Review NWI. Note location of any wetlands.

Step 3. - Review Soil Survey. Note location of hydric soil map units, and location of map units with hydric inclusions.

Step 4. - Review FSA slides for all years, and at least 5 years of slides that are determined to represent normal periods of precipitation (see General Information, #6 FSA Slides above). Note any areas converted from other land uses to cropland. Note location and year of wetland signatures from the slides.

Step 5. - Document the various wetlands, etc., on the inventory base map according to the following rules according to apparent land use:
Cropland:

- In every cropland field, place a "PC"* if the soils in the field are all hydric.
- Place a "NW" in each cropland field, if all the soils in the field are non-hydric.
- Place a NW/PC* in each cropland field, if there are both non-hydric and hydric soils, or if there are soils with hydric inclusions.
- For areas of the field that have hydric soils or soil with possible hydric inclusions, review the FSA slides and NWI. Delineate and label areas "FW" that have wetland signatures greater than 50% of the time (3 or more years out of 5; or 2 out of 5 years if the area also is shown on the NWI as a wetland) for years that have been determined to represent normal periods of precipitation. For the extent of the area to be delineated, use the wetland signature boundary during a year of normal precipitation and conditions.
- If the area meets FW criteria, record the years wetland signatures were observed beside the FW (e.g.: FW '86'88'91).

* NOTE: For this inventory procedure, the assumption is made that all hydric prairie soils in Illinois have had some manipulation if they are being cropped. If it is discovered that a cropland field with prairie soils has not had any subsurface or surface drainage, then the "PC" or "FW" will be changed to "W" for the hydric soils and cropping can continue as weather permits.

Areas of Woodland or Herbaceous Vegetation (not pastured or hayed):

- Areas too small to delineate within cropland, including single trees and single tree wide fence rows that are not also drainage ways, are considered part of the cropland field and are considered whatever the surrounding field is (e.g. PC, NW, FW).
- If on NWI and a hydric soil, outline the area and label with "W"
- If not a hydric soil or soil with hydric inclusions, and not on the NWI, outline the area and label with "NW".
- All other cases are to be outlined and labeled "NI" for "Not Inventoried". Areas of NW within areas of NI are only delineated out of the NI area only if apparent landmarks allow for accurate separation of the two areas.

Note: On any wetland determination or copy of a wetland inventory given out to a client, an explanation of "NI" must be included. This note should state that NI areas may or may not contain wetlands. If any manipulation is planned for this area, a determination should first be requested for Farm Bill or section 404 of the Clean Water Act purposes.

Pasture: (<25% canopy coverage of woody species, and not cropped from 1980 - 1985)

- Areas with all hydric soil, outline and label "FWP"
- Areas with soils with hydric inclusions, and on the NWI, outline and label "FWP"
- Areas with only non-hydric soils, not on the NWI, outline and label "NW"
- All other cases, outline and label the area "NI".

Ponds:

- Outline all ponds. Large lakes do not have to be outlined if it is clear where the boundaries are.
- If the pond is surrounded by predominantly hydric soils or soils with hydric inclusions, label "W".
- If the pond is surrounded by predominantly non-hydric soils, label "AW".

Streams:

- All ditches, creeks, streams, and rivers, should be delineated as NI on a wetland inventory. The upstream extent to which they are delineated generally should be no father than that which is labeled as a riparian area on the NWI. For a determination, the delineation of these areas should be the same unless there is a proposed manipulation that would affect an area labeled NI, in which case the determination must be coordinated with the Corps of Engineers for a determination of "Waters of the U.S."

Converted Wetland *:

The 1985 FSA slide, or other 1985 aerial photography, should always be compared with the latest aerial photography available. Note all wetlands, farmed wetlands, and farmed wetland pastures in 1985 that have been manipulated and converted to cropland. Natural wetlands cropped under natural conditions (e.g., during a drought) is not a converted wetland for Farm Bill purposes if woody vegetation was not cleared. Otherwise, use the following procedure.

- Determine the part or parts of the area made croppable that was a wetland, farmed wetland or farmed wetland pasture in 1985 using the above convention.

- From the FSA slides, or other aerial photography, determine the year in which the area was manipulated (cleared, drained, levied, etc.) and made croppable.

- Outline and label the area "CW" if the conversion occurred in 1990 or before (converted on the 1990 FSA slide). Label the area "CW+year" (e.g. CW+91) for the year in which the conversion occurred after 1990.

- If an area has been converted (cleared, drained, filled, etc.) since 1985 but not made croppable (this will probably require a field investigation to determine) outline the area and label it WX.

* NOTE: Converted wetland in this sections refers to its use as a wetland label for Farm Bill purposes, not necessary for Section 404 of the Clean Water Act.

Orchards, Nurseries, and Vineyards:

Orchards, nurseries, and vineyards are assumed to be in long term rotations with crops in Illinois. Inventory the same way as cropland. However, if a determination is being done as the result of planned manipulation of the area, a site investigation should be done if the area has hydric soils.

Step 6. - Additional Documentation - For all areas except "NI" that are labeled add the following check marks to wetland inventories:

X - if the area is on the NWI.
✓ - check if the area has hydric soils.
✗ - check with a slash if the area has soils with hydric inclusions.

For inventories completed before 1994, the following documentation can be found:

Red check if the area is on the NWI.
Green check if the area has hydric soils.
Green check with a slash if the area has soils with hydric inclusions.

SATURATED SOILS OUTSIDE THE WISCONSIN GLACIATION REGION

Areas outside the Wisconsin Glaciation area of Illinois are mapped under this convention. In non-cropped areas the wetland criteria are the same as for the Potholes and Saturated Prairie Soils convention. In cropland the National Food Security Act Manual (NFSAM) requires surface water to be present for 15 consecutive days (except for potholes) during the growing season to be a wetland. In Illinois, the evaluation of the FSA aerial slides for this convention is the same as for the Potholes and Saturated Prairie Soils convention. Training on interpretation of the wetland signatures must be adjusted at the regional level to correspond to wetlands in each region.

Therefore, under this convention follow the same steps and procedures in the Potholes and Saturated Prairie Soils convention above.

FLOODED OR PONDED SOILS

The hydrology criteria on cropland and non-native pasture/hayland is: 7 days ponding or flooding in non-native pasture/hayland and all potholes; OR 15 days in cropland that is not a pothole.

In naturally vegetated wetlands inundation and/or soil saturation must be present at least 5% of the growing season to meet wetland hydrology criteria.

This convention is to be used in conjunction with the first two conventions.

Ponded

The evidence of ponding in cropland is observed as wetland signatures on the FSA aerial slides (see "FSA Slides" on page 2). Therefore, the other conventions cover this condition. In non-cropped areas, the soils and NWI will identify it as a wetland in the other conventions, or require that a site investigation be made.

Flooded

Long duration (15 days or more) on cropland during the growing season can result from flooding by a major river. The Illinois State Water Survey developed elevation data from stream gage data, for the 15 day duration flood (50% chance of occurrence) during the growing season along major rivers where the data was available. This has been given to each county for which there was data. The following procedure should be used for where there is data. Otherwise, it is assumed that this type of flooding will be captured under the first two conventions (observed as ponding) or does not exist. Where flooding data exist:

Step 1) Delineated on the base map that areas unprotected by levee below the 15 day duration flooding elevation for the nearest river mile to that location.

Step 2) Label the delineated area above, as "FW" if cropland.

Step 3) Label all non-cropped areas delineated above as "W".

SUMMARY OF DOCUMENTATION

Code	Definition
AW	Artificial Wetland
CW	Converted Wetland between 1985 - 1990
CW+year	Converted Wetland after 1990
FW	Farmed Wetland
FWP	Farmed Wetland Pasture
NI	Not Inventoried, no determination/delineation has been made for this area.
NW	Non Wetland
PC	Prior Converted Cropland
W	Wetland
WX	Manipulated but cropping is not possible
Year by FW	Year in which a wetland signature was observed on aerial photography
✓	Area has a hydric soil map unit
✓	Area has a soil map unit with possible hydric inclusion
X or a Red Check	Area is on the NWI